To: Daly, Eric[Daly.Eric@epa.gov]
Cc: Nguyen, Lyndsey[Nguyen.Lyndsey@epa.gov]; Giardina, Paul[Giardina.Paul@epa.gov]; Povetko, Oleg[Povetko.Oleg@epa.gov]
From: Koehler, Larainne
Sent: Wed 5/4/2016 7:02:54 PM
Subject: RE: Holy Trinity Cemetery-Radon

See below:

Larainne Koehler
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Radon & Indoor Air Coordinator
Radiation and Indoor Air Branch - 25th Floor
US Environmental Protection Agency - Region 2
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For radon information in NJ, please call 1-800-648-0394 or visit www.njradon.org
Radon & Indoor Air information is available from the EPA website at www.epa.gov/iaq

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From: Daly, Eric
Sent: Wednesday, May 04, 2016 12:37 PM
To: Koehler, Larainne <Koehler.Larainne@epa.gov>
Cc: Nguyen, Lyndsey <Nguyen.Lyndsey@epa.gov>; Giardina, Paul <Giardina.Paul@epa.gov>; Povetko, Oleg <Povetko.Oleg@epa.gov>
Subject: Holy Trinity Cemetery-Radon

Hi Larainne:

Please see my responses below in **black**.

As for the radon levels, I agree – in a normal situation, these levels would suggest installation of a mitigation system. Here are some initial thoughts:

- Although a floor diagram was not provided, can it be assumed that since areas over a crawlspace were measured, that areas above all foundations have been measured? **I am not sure what this question means. Please clarify. If your question is "Did we measure/sample other areas besides the basement?" Then yes. We did the main floor living room and bedroom, as well as, upstairs bedrooms. As per the AARST/ANSI Stds MAH 2014 to make sure all combination foundations were covered. (p9)**

future occupants who may use these areas.

4.1.3 ***Additional Considerations***. Additional test locations are recommended for:

4.1.3.1 large homes, where the footprint on the level of the home being tested is over 2,000 square feet.

4.1.3.2 homes with multiple heating and cooling systems where one test location may not be representative of radon concentrations in other locations.

4.1.3.3 homes with combination foundations where one test location may not be representative of radon concentrations in other areas of the home. An example of a combination foundation is a split-level dwelling with an occupiable basement, a slab-on-grade room, and a room over a crawl space.

- The location of the sump measurement is not clear – it is probably NOT a valid measurement location for decision making, but there are other elevated readings. **We should have an accurate diagram shortly of the layout. However, why wouldn't it be a valid measurement location? Wouldn't it show that subsurface soil gas is entering the house? That makes it a diagnostic measurement and not a screening measurement. The idea is to get representative measurements of breathing zone air – that's why detectors are not located on the floor, etc.**

where they are not influenced by other factors:	*Do not place detectors within enclosed areas of high humidity. Exam rooms and kitchens isolated by partitions or other enclosures.*
	Exception: Such locations should be avoided but are permitted unaffected by high humidity. Confirm manufacturer or laborato prior to exercising this exception.
	Do not place detectors inside cupboards, sumps, or nooks within the
	Do not place detectors near drafts caused by heating and air conditi
	Do not place detectors near heat sources, such as on appliances, rad
	Avoid placing detectors on or near objects that may produce radiatio collections, granite counter tops, hearths or slate pool tables).

- Were the two measurements labeled Basement NW duplicates? **YES Basement--NW--#5374-04 and Basement--NW--#5374-05 are duplicates good, the Relative % difference for these duplicates is within the expected precision.**

- Contractor was certified by NRSB-**Yes. Since you informed me about the need for a radon specialist to place the canisters during Moffat Street, we have been getting a certified sub-contractor**

- Based on data from the Buffalo Airport, there were some wind gusts during measurements – but not outside measurement range. **So that is a good thing that we were not out of measurement range? Can you refresh my memory on why wind gust affects indoor radon measurements in the basement? As with much of radon – it depends. Could have a venturi effect on the house and increase levels, especially if there is leakage on the downwind side of house; Could positively pressurize the house and lower levels; Could deplete radon in surrounding soil. It is uncontrollable and therefore to be avoided. Some just say high winds – Illinois and some others say 30mph sustained winds, which did not seem to be the case here.**
- There were some highs in the 60's – were closed house conditions followed in the entire house? **It was in the 40-50's for most of our time in Niagara Falls area. The house was closed during the sampling period.**

- **The home does not use well water. Water is supplied by the city.** Good – one less thing to worry about

- **Below is what I have from NYS DOH website for Lewiston. The complete document is attached.** This is the same data, for some reason the screen shot I had just listed everything twice. So 14% of the basement screening tests are high – but it doesn't provide any info about this individual house.

NYS DOH Measured Basement, First Floor Screeni

County	Town/Village/City	Test Location	Homes Screened	Rado Average
NIAGARA	LEWISTON	Basement	138	2.54
NIAGARA	LEWISTON	1st Floor	25	1.69

From: Daly, Eric
Sent: Monday, May 02, 2016 4:39 PM
To: Koehler, Larainne <Koehler.Larainne@epa.gov>
Cc: Nguyen, Lyndsey <Nguyen.Lyndsey@epa.gov>; Giardina, Paul <Giardina.Paul@epa.gov>; Povetko,

Oleg <Povetko.Oleg@epa.gov>
Subject: Holy Trinity Cemetery
Importance: High

Good Afternoon Larraine:

At Holy Trinity Cemetery, we had to look into a claim that one of the slag road beds at the site extended across the Roberts Street to a residence (Labeled Area 5 in figure attached). All gamma survey readings inside the home and on the property were background. However, the radon canister readings (Attached) came back elevated in the basement. My initial response as was my management…would be put in a sub slab radon mitigation system and the inhalation issue would be solved. I am requesting your input on the situation. We just received the results and I do not have the floor plan diagrams yet.

- Can you recommend any additional assessment work we should perform?
- I still need to ask if they use well water or not….any guidance when it comes to showering if they do have well water? Get the info on well first. Would not provide any guidance just based on the fact that they had a well without a radon in water test first. There is clearly a soil gas source here.
- The highest reading was at sump pump. I assume this is the easiest access point for the gas to flow.
- Can you provide the average naturally occurring radon readings in the area of Lewiston, NY or point me in the right direction to get this information? The tables do not show measurements for Lewiston, but the maps show the following:
  http://www.health.ny.gov/environmental/radiological/radon/maps_statistics.htm

http--www.nrc.gov-readi... More Area Hotels - Univer... EPA R2 WebMail EPA Resources Lookup Other Gov't

NEW YORK STATE

Services News Government Local

HEALTH DATA NY ▼ DATA.NY.GOV DEVELOPERS ▼ HELP ▼ ABOUT ▼

Unsaved View Save As... Revert

Based on Radon Test Results By Town: Beginning 1987

The DOH Radon Program contracts with a radon testing laboratory to provide short-term charcoal radon test kits, radon test kit analysis

	/Village/City	Test Location in Home	# of Homes Tested	Average Radon (pCi/L)	GEO Mean	G
1	LEWISTON	Basement	138	2.54	1.48	
2	LEWISTON	1st Floor	24	1.7	1.09	
3	LEWISTON	Basement	138	2.54	1.48	
4	LEWISTON	1st Floor	25	1.69	1.1	

I need to provide the homeowner with the information ASAP but wanted to reach out to you for additional guidance first.

Thanks

Regards,

Eric

"We must, indeed, all hang together, or assuredly we shall all hang separately", Benjamin Franklin
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